Report on Survey of
State Minor Source
Air Quality Permit Programs

Prepared for

ADEC CONTRACT # 18-8006-10
DEVELOPMENT OF A NEW
AIR QUALITY PERMIT PROGRAM
TASK 2 - MINOR PERMIT PROGRAMS ANALYSIS

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Table of Contents

List of Tables

1.0 Introduction

The Alaska state legislature passed a bill in 2003 that directs the Alaska Department of Environmental Conservation (ADEC) to rewrite its air quality permit regulations. The new major source permit rules will closely mirror the federal PSD, Nonattainment NSR, and Title V rules, and the new minor source permit rules will be rewritten to use simpler administrative tools. The legislation gives the department until May 2004 to have effective regulations in place. The target date for adoption of the revised minor source program is March 2004.

To help meet this aggressive schedule, ADEC is using contractors to assist on various work tasks, including Task 2. The objective of Task 2 is to survey other States minor source permit programs to identify permitting options that simplify minor source permitting while protecting public health and the environment. The scope of work for Task 2 includes canvassing other states' minor permit programs, including at a minimum the states of CO, AZ, UT, NV, MT, TX, OK, OR, NM, and MN. The evaluations will be for the following:

- New or modified minor source types (i.e., not subject to Title V) likely to occur in Alaska including (but not limited to) asphalt plants, soil remediation, incinerators, rock crushing, and oil and gas related sources; these sources will be herein referred to as Type I minor sources
- Preconstruction Review for minor modifications at sources that are Title V or PSD major; these sources will be herein referred to as Type II minor sources.

The evaluations are for sources of particulate matter, SO_2, and NO_x, with the most emphasis on particulate matter. The scope of the survey does not include sources that are regulated only for VOC emissions, as there are no documented tropospheric ozone problems in Alaska.

This report presents the results of the state survey, which includes the following:

- A summary of other states' minor source permit programs;
- Descriptions of program options for the department to consider. These include both conventional permitting options and promising innovative permit streamlining options. Different kinds of minor permits may be appropriate for different kinds of true minor sources. This report identifies administrative procedures and permit content including monitoring, record keeping, and reporting, and other important permit conditions.
- State contacts (name, address, phone number and e-mail address), web page links, and regulatory or reference citations associated with the options discussed.

2.0 Background on Air Quality Permits

2.1 Objectives of Air Permitting Programs

The main objectives of a state air permitting program are to implement the requirements of the federal Clean Air Act, and to safeguard air quality by developing state rules that regulate the construction and operation of air emission sources. The Clean Air Act at Section 110(a)(2)(C) specifically requires that each State Implementation Plan (SIP) include the "regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved" (emphasis added). Another important element of a state permitting program is to provide mechanisms by which sources can request enforceable emission limits that allow them to avoid more complex major source permit requirements.

The universe of stationary sources that might be regulated can be divided into three general groups;

- sources that are "very small" such that they will not have a significant effect on air quality and do not trigger any regulatory requirements (in ADEC rule terminology sources that are not "Ambient Air facilities"),
- sources that are "small enough" that they don't trigger specific major source requirements, such as Prevention of Significant Deterioration (PSD) or Title V operating permit requirements, but still are "large enough" to have the potential to affect air quality and therefore warrant state regulation (minor sources),
- sources that are "large enough" to trigger the applicability of major source requirements (major sources).

There are several approaches typically used to "not permit" very small sources, including de minimis emission thresholds, exemptions for specific source types, and registration options. This report presents an evaluation of numerous state air programs and how they define and exclude these smaller sources from air permitting requirements.

For major sources that trigger federal requirements, the federal rules prescribe very specific construction and operating permitting requirements. These federal regulations can be incorporated into state rules either by developing acceptable state rules, or by incorporating the federal rules by reference.

For the minor sources that do not trigger major source requirements, but are "large enough" to affect air quality, a state minor source permitting program is typically used to regulate construction, modification, and operation. Some state minor source permitting programs use the same construction and operation permitting rules as for major sources; while this approach ensures that each source is closely evaluated, the resources expended (by the source and by the air agency) may not be proportional to the air quality benefits. Other states have developed more streamlined minor source permitting programs that use such mechanisms as pre-approved General Permits or multi-tiered minor-source "permit hierarchies" to target the sources with greater potential for air quality impacts, while

relaxing requirements for sources with lower emissions and air quality impacts. This report presents an evaluation of numerous state air programs and how they implement minor source air permitting.

In order to avoid confusion, the following terminology is used in this report to be consistent with DEC's current statute. "Stationary source" and "source" refer to any facility that emits air pollutants, and "emission unit" refers to any part of a stationary source which emits or has the potential to emit any regulated pollutant.

2.2 The Types of Air Permits

There are two general types of air permits, construction permits for new sources and for modifications at existing sources, and operating permits. Construction permits are used to evaluate the proposed equipment, emissions, and ambient impacts of a source or modification to ensure that all applicable requirements are met and that the ambient impacts do not result in violations of the ambient standards. The purpose of the operating permit is to consolidate all of a source's requirements into a single permit document, and to describe how compliance with those requirements will be demonstrated (i.e., appropriate Monitoring/Recordkeeping/Reporting [MRR] requirements).

Some states have decided to consolidate the construction and operating permits into a single "unitary" permit. While such an approach theoretically can reduce the regulatory and administrative burden to applicants and agencies ("one permit"), the reality can be somewhat different. Typically, a source desires authorization to construct in a short time frame, while the development of the more detailed operating permit conditions can require a long time. Therefore, the use of separate construction and operating permits can translate into a quicker approval to construct, which is a highly desirable feature of any permitting program. A state may mix separate and unitary permit structures to treat different source categories; for example, separate construction and operating permit programs for major sources, and a unitary minor source permit that combines the functions of construction and operating permits for minor sources.

Construction permits can use a simple system of source classification, or can be based on a series of permit types of increasingly higher levels of complexity. On one extreme, a state program may only use two construction permit categories, minor source versus major source construction permits. On the other extreme, a multi-tiered hierarchy of construction permits (from lowest to highest complexity) could include the following permit categories or classifications:

- Registration or Notice to Construct
- State "True Minor Source" Construction Permit
- State "Synthetic Minor Source" or "Avoidance" Construction Permit
- Major source NSR Construction Permit

The level of detail in operating permits is dependent upon the emissions and nature of the permitted source, and the applicable requirements. Many states have implemented two categories of operating permits, minor source operating permits and Title V federal

operating permits. However, a more complex multi-tiered hierarchy of operating permits (from lowest to highest complexity) could include the following permit categories or classifications:

- Registrations
- True Minor Source Operating Permit (TMSOP)
- Federally Enforceable State Operating Permit (FESOP) ("Synthetic Minor Permit")
- Title V (major source) Operating Permit

Given the two general types of permits (construction and operation), the range of potential sub-categories under each permit type, and the option to combine the two permits into a unitary permit, there is a wide variety of permitting programs throughout the country. This report focuses on "minor source permitting", which includes the functions of both construction and operation permits for "Type I" sources (minor with respect to Title V), and the construction permit review for "Type II" sources (major with respect to Title V).

2.3 Synthetic Minors

As stated earlier, one of the important practical functions of a state minor source permitting program is to provide mechanisms by which sources can request enforceable emission limits that allow them to avoid more complex major source permit requirements. Many sources have the potential to emit major amounts of air pollutants, but actually emit amounts that are much lower than the major source thresholds. For such sources, state permitting agencies can provide mechanisms to limit potential to emit and avoid major source permitting requirements. EPA has described some of the approaches that can accomplish this, including minor source construction permit programs, minor source state operating permits, general permits, and State implementation plans (SIP).

There are two overall approaches that states can use to establish enforceable emission limits. The first approach is source-specific permitting, wherein the state create terms and conditions tailored to a given plant site. Under the second approach, generally appropriate for less complex sources, states create a standard set of terms and conditions for many similar sources at the same time. There are variations on this second approach, and the terms air quality agencies use to describe these mechanisms include general permits and permits-by-rule (PBR) (PBR are also sometimes referred to as "prohibitory" or "exclusionary" rules). For a general permit, the permitting agency establishes a standard set of terms and conditions, and then incorporates those terms and conditions into the general permit. Sources wishing to be subject to the general permit must provide a notification to the permitting agency, and must comply with the standard terms and conditions. From the source's perspective, the administrative procedure for receiving a general permit is typically much more streamlined than receiving a case-by-case permit. State "permits-by-rule" are similar to general permits, but states put them in place directly in the rules rather than implement through the permitting process.

At the beginning of the Title V permit program, there were concerns that states could not develop and implement these various "enforceable avoidance limit" mechanisms in time to meet the Title V permitting timelines. Therefore, EPA developed a transition policy[1] for temporarily establishing potential to emit (PTE) limits to avoid major source status under Section 112 and Title V of the Clean Air Act. One important element of this policy was that sources which maintained adequate records to demonstrate that their actual emissions are less than 50 percent of the Title V emission thresholds were not to be considered major sources, even if their potential emissions exceeded the Title V thresholds. This policy was extended three times, and has expired as of December 2000. However, to the extent that states have adopted this policy in their approved SIP rules, this provision may still be available in some states.

2.4 EPA Significant Emission Rates (SERs)

EPA developed the PSD Significant Emission Rates (SERs) to define "de minimis emission thresholds" for major modifications that would not result in appreciable ambient impacts, and therefore do not warrant PSD permitting. Since de minimis permitting and modeling thresholds are common components of state minor source permitting programs, the following paragraphs summarizes the rationale and development of the SERs.

EPA's objectives for the SERs were to provide Class I area protection, to guard against excessive "unreviewed" consumption of the PSD increments; and to assure meaningful permit reviews (i.e., review of sources and modifications large enough to warrant review). The first step in developing the SERs for the criteria pollutants was to establish air quality "design values". For SO2 and PM10, ambient concentrations were defined that represented small percentages of the primary 24-hour air quality standard (the 24-hour standard was used instead of the annual standard because the 24-hour impacts tend to be the controlling factor in determining whether air quality standards or increments are exceeded). EPA decided to use 4% of the 24-hour primary standard as a design value for both PM and SO2, to include an adequate margin of safety that sources that could have appreciable impacts on air quality would be reviewed, and to protect the PSD increments. These design values were then converted to threshold emission rates in accordance with EPA modeling procedures (as of 1980) for a generic source. Based on EPA's modeling analyses, the design ambient concentrations corresponded to emissions rates of 25 tons per year for PM and 40 tons per year for SO2. Similar analyses were performed to determine the Significant Emission rates for other criteria pollutants. See the preamble to the 1980 PSD Rules at Federal Register Vol. 45, No. 154, August 7, 1980 page 52707, for a more detailed discussion of the development of the SERs.

It is important to note that EPA developed the SERs back in 1980 using simple "elevated stack in flat terrain" modeling approaches that were available at that time. Since then, models have evolved and can now better simulate downwash, terrain impaction, and other important effects that can result in high air quality impacts. In fact, using worst-case assumptions on downwash and small distances to ambient air boundaries, modeling results can now show that the sources emitting at levels below the SERs can actually

[1] See memorandum dated December 20,1999 titled "Third Extension of January 25,1995 Potential to Emit Transition Policy" from John S. Seitz.

exceed the NAAQS and increments, rather than have impacts that are only small percentages. Therefore, while the SERs are useful to define de minimis emission thresholds for sources with good dispersion characteristics that result in small air quality impacts and therefore do not warrant permitting, they do not achieve this for sources with poor dispersion characteristics.

3.0 Criteria for State Selection

The initial Scope of Work included the following list of States to evaluate: CO, AZ, UT, NV, MT, TX, OK, OR, MN, and two or more of Washington State's local clean air agencies. However, the contractor was allowed the discretion to select other States or local agencies to evaluate. A preliminary review was conducted of the listed State/local agencies, as well as several other States. The following criteria were used to determine if a State's minor source program warranted further review:

- Streamlining options, especially for source categories of concern for AK:
  - Permits-by-rule; and/or
  - General permits;
- Administrative procedures, such as de minimis exemptions or other types of exemptions/registration;
- Similar source types and land use as Alaska; and
- Methods used to address attainment with NAAQS and increments.

The preliminary review resulted in the following States included in the survey, for the following reasons:

AZ – similar source types; modeling for minor sources; combined construction/operating permit with specific compliance requirements
CO – de minimis levels for permitting and registrations; self-certification procedures
MN – streamlining efforts – Registration Permits
MS – general permit for asphalt, including notice by applicant up front; streamlining exemptions
NC – optional construction registration with more formal application follow-up
NJ – general permits (combustion sources, soil remediation for gasoline), including on-line applications; state-of-the-art requirements; incinerator rule
NM – general permits for asphalt; quarrying, crushing, and screening; and oil and gas
OK – permit by rule (PM emissions); general permits for asphalt and non-metallic mineral processing; allowable emission limits for incinerators; de minimis threshold
OR- several types of minor permits including "basic", "general", and "simple" for different source categories and sizes (e.g., rock crushing < 5000 tpy, between 5000 and 25,000 tpy, > 25,000 tpy); "simple" is for plant-wide emission limits 1 tpy less that Significant Emission Rates (SERs)
SC – modeling required for minor sources, although some streamlining procedures are included; list of standard monitoring conditions that are applied to non-Title V/NSR permits; also currently conducting streamlining effort for construction/operating permit program
TX – permit-by-rule and standard permits for source categories of interest, including oil and gas, rock crushing, hot mix asphalt and other asphalt-related sources, combustion sources, and soil remediation
UT – significant list of exemptions, including small source (de minimis emissions), flexibility changes, replacement-in-kind equipment, and de minimis emissions for soil remediation projects

4.0 Results of Minor Source Program Survey

This section presents the survey results in tabular format. RTP conducted the State survey by investigating State web sites and on-line regulations, as well as interviewing agency personnel when necessary. Table 1 presents a listing of agency contact information and web links. The survey results are summarized in the following sections and Tables 2 through 4, and the program elements are discussed in Section 5.

4.1 Procedures to Exclude Smaller Sources

Table 2 summarizes the survey results for de minimis threshold and exemption procedures that reduce an Agency's permitting burden by excluding "smaller" sources from any permitting requirements. Also included are small source registration options, which require small source to submit information and register, but not necessarily to acquire a minor permit.

4.2 Permit Streamlining Options

For emission units/source categories that need to be permitted, the States use various streamlining options, such as General Permits (GP) and Permits by Rule (PBR). These options are presented in Table 3, and further information is listed about GP coverage, source categories, and permit duration. Other "innovative" streamlining options are also highlighted.

4.3 Ambient Modeling Requirements

Table 4 presents the survey results on ambient air analysis requirements for minor sources. The survey determined if ambient model was required of minor sources, and if so what types of de minimis emission thresholds (if any) are used to trigger the modeling requirement. Additionally, if the state uses streamlined permitting options such as PBR and GPs, the survey determined if an ambient analysis was part of the development of the PBR/GP.

Table 1 - Agency Contact Information

States	Web Page Link	State Contact	Phone Number
AK	http://www.state.ak.us/local/akpages/ENV.CONSERV/dawq/dec_dawq.htm		
AZ	http://www.adeq.state.az.us/environ/air/index.html	Eric Massey	602-771-2288
CO	http://www.cdphe.state.co.us/ap/aphom.asp	Roland Hea	303-692-3252
MN	http://www.pca.state.mn.us/air/index.html	Mary Jean Fensky	651-297-5472
MS	http://www.deq.state.ms.us/MDEQ.nsf/page/epd_epdhome?OpenDocument	Dan McCleod	601-961-5162
NC	http://daq.state.nc.us/	Donald van der Vaart	919-715-6253
NJ	http://www.nj.gov/dep/aqpp/	Lou Mikolajczyk	609-633-2829
NM	http://www.nmenv.state.nm.us/aqb/index.html	Ted Schooley	505-955-8088
OK	http://www.deq.state.ok.us/AQDnew/index.htm	Dawson Lasseter	405-702-4100
OR	http://www.deq.state.or.us/aq/	Gerry Preston	503-229-6458
SC	http://www.scdhec.net/baq/	Robbie Brown	803-898-4105
TX	http://www.tnrcc.state.tx.us/permitting/airperm/index.html	Anne Inman	512-239-1276
UT	http://www.eq.state.ut.us/EQAIR/aq_home.htm	Regg Olsen	801-536-4165

Table 2 - Summary of Procedures to Exclude Smaller Sources (Who needs a permit?)

State	de minimis Threshold?	de minimis Threshold Level* (Basis)	Registration?	Registration Types and Coverage	Exemptions?
AK	--	--	--	--	X
AZ	--	--	--	--	X
CO	X	<5 tpy VOC, PM10 <10 tpy TSP, CO, SO2, NOx (unc. actual)	X	APEN only if uncontrolled actual emissions ≥2 to 5 tpy (attainment); APENs also submitted with construction permits	X
MN	X	<25 tpy PM10 <50 tpy SO2 <100 tpy NOx, CO, VOC, PM (PTE)	--	--	X
MS	--	--	--	--	X
NC	--	--	X	NC has the regulatory authority for source registration but does not currently use this authority	X
NJ	--	--	--	--	X
NM	X	NOI: <10 tpy Constr: <10 lb/hr or 25 tpy (PTE)	X	Notice of Intent (NOI) if emissions between 10 and 25 tpy	X
OK	X	<5 tpy (actual)	--	--	X
OR	--	--	--	--	X
SC	--	--	--	--	X
TX	--	--	--	--	X
UT	X	<5 tpy (actual)	--	--	X

* Sources are exempted unless subject to an NSPS or NESHAP.

Table 3 - Summary of Permit Streamlining Options

States	Streamlining Procedures						General Permit and/or Permit by Rule For:						
	General Permits (GP)	GP only if Title V Minor?	GP Renewable?	Permits by Rule	Other	Other -Type	Asphalt Plants	Soil Remediation	Incineration	Rock Crushing	Oil & Gas	Other	Other -Type
AK	X	No	Yes	X	--	--	X	X	--	X	X	X	Diesel electric generators, small boilers, tanks
AZ	X	Yes	Yes	--	--	--	X	X[1]	--	X	--	X	Boilers (including IC engines), stationary generators, and concrete
CO	--	--	--	--	X	Self-certification procedures	draft	--	--	--	--	--	--
MN	X	No[2]	No	--	X	"Registration" permit for sources subject to certain NSPS and major from PTE but actuals ≤50% of Federal threshold, 4 types, no public notice, no expiration; insignificant modifications	Let expire	--	--	X	--	X	General manufacturing (cleaning, painting, coating, grinding, and fuel combustion)
MS	X	Yes	Yes	--	X	Streamlining exemptions	X	--	--	--	--	X	Permits are multi-media (air/water); developing for concrete batch plants
NC	X	Yes	Yes	--	X	Optional construction registration, follow-up with more formal application	X	--	--	X	--	X	Emergency generators and concrete batch plants
NJ	X	Yes	Yes	--	--	--	--	X[1]	--	--	--	X	Boilers and heaters <10 MMBtu/hr, and emergency generators
NM	X	Yes	No	--	--	--	X	--	--	X	X	--	--
OK	X	Yes	No	X[3]	X	Some minor modifications allowed without action by source	X	--	X[4]	X	--	X	Organic liquid storage, petroleum liquid storage, both include IC engines
OR	X	Yes	Yes	--	X	Short Term Activity Permit for unexpected or emergency activities (≤60 days)	X	X[5]	X[5]	X	--	X	Ready-mix concrete, boilers, halogenated solvent degreasers
SC	X	Yes	Yes	--	--	--	X	--	--	--	--	X	Fuel combustion sources
TX	X	No[6]	Yes	X	X		X	X	--	X	X	X	Asphalt silos, combustion sources, concrete batch, and tanks, storage and loading
UT	--	--	--	--	--	--	--	--	--	--	--	--	--

[1] For gasoline contaminated sites.

[2] MN has a Part 70 general operating permit for General Manufacturing.

[3] For PM emissions, VOC storage and loading facilities; actual emissions < 40 tpy.

[4] Allowable emission limits for incinerators.

[5] "Simple" Air Contaminant Discharge Permit (ACDP) rather than a General Permit.

[6] GPs require a certified registration stating maximum emission rates to avoid applicability of Title V, but PBRs are applicable to sources with emissions up to 250 tpy NOx and CO.

Table 4 - Summary of Ambient Analysis Provisions

State	Ambient Impact Analysis						State Modeling Contact
	Modeling Required for Minor Permits?	If modeing required, by Regulations or Policy?	Are there Modeling Emission Thresholds (tpy or lb/hr basis)?	Is Modeling only for NAAQS or also PSD Increments?	Comments	If GPs, PBR, or Registration options are available, did their development include ambient modeling?	
AK	Yes	Regs	tpy				Allan Schuller
AZ	Yes[1]	Policy	No thresholds	NAAQS	Many of the GP permit limits directly based on modeling	Yes	Peter Hyde
CO	Yes[1]	Policy	SD SER in tpy and lb/h	NAAQS	Regs require NAAQS compliance analysis for minor sources, GP is draft	Yes	Chuck Machovec
MN	No	--	--	--	New Regs proposed that include modeling for minors	Yes	Dennis Becker
MS	No	--	--	--	odeling infrequently required on a case-by-case basis, if dense source are	No	Mya Rao
NC	Can Be	--	--	--	Modeling can be required on a case-by-case basis	No	Jim Roller
NJ	Yes	Regs	PSD SER in tpy	Both	Thresholds equal to PSD SER	Yes	Allan Dresser
NM	Yes	Regs	25 tpy or 10 lb/hr	Both	Modeling can be required at any emission level	Yes	Eric Peters
OK	No	--	--	--	or sources may have to model HAPs, and sulfur amine units require mode	No	Eric Milligan
OR	Yes	Regs	PSD SER in tpy	Both	Thresholds equal to PSD SER - GPs are only for < SER Emissions	No	Phil Allen
SC	Yes	Regs	No thresholds	Both	Separate minor construct vs operating permit, some modeling exemptions	No	Kevin Clark
TX	Can Be	Regs	No thresholds	Both	Modeling can be required on a case-by-case basis, except none for PBRs	Yes	Robert Opiela
UT	Yes	Regs	PSD SER tpy	Both	Thresholds equal to PSD SER, except 5 tpy fug PM10 threshold	NA	David Prey

NOTES: "PSD SER" refers to PSD Significant Emission Rates

[1] Department performs a screening-level analysis. Not required from applicant by regulation, but can prevent delays if refined analysis needed.

5.0 Analysis of Program Options

The notable program elements used by the States to simplify and streamline the minor source permitting process are discussed in this Section. During the survey RTP discovered that several other States are considering changes to streamline minor source permitting, so a section has been included to discuss the status and strategies at those states. Additional program elements of interest to ADEC (e.g., portable source permitting, ambient modeling requirements) are also discussed.

5.1 Procedures to Exclude Smaller Sources

5.1.1 De Minimis Permit Thresholds

Most states use some type of de minimis thresholds to define which sources do not require any permitting. Oklahoma and Utah have a 5 tpy threshold, and New Mexico has both 10 lb/hr and 25 tpy thresholds, for all regulated pollutants. Colorado and Minnesota have different thresholds for each pollutant; the PM10 thresholds are 5 tpy for Colorado and 25 tpy for Minnesota. The basis for the thresholds can be either PTE or actual emissions; generally the higher thresholds are based on PTE and the lower ones are based on actual emissions (Colorado's thresholds are based on "uncontrolled actual emissions").

Sources can use these permitting de minimis thresholds to avoid permitting requirements, but most states still require minor permits for any source that is subject to a Federal New Source Performance Standard (NSPS) or National Emission Standard for Hazardous Air Pollutant (NESHAP). These sources are not required to apply for a Title V permit under EPA's policy that allows state agencies to defer non-major facilities from Title V permit requirements if only a NSPS or NESHAP standard applies. The rationale for states using this "exclusion" to the de minimis thresholds is simply to ensure that these NSPS/NESHAPs affected sources are aware of and comply with the NSPS/NESHAP requirements (particularly the notice requirements) via the minor permit.

Oregon uses several tiers of minor permits that are triggered by various emission thresholds, including (in order of increasing complexity) "basic", "general", and "simple" permits (also "standard" and "construction" permits for major NSR sources). The different permit types apply to different source categories and sizes (e.g., rock crushing < 5000 tpy, between 5000 and 25,000 tpy, > 25,000 tpy). "Simple" permits are used when plant-wide emission are 1 tpy less than the EPA Significant Emission Rates (SERs). The objective behind such a multi-tier permit approach is to better match permit detail and content to the importance of the source.

5.1.2 Registration of Small Sources

Two States, Colorado and New Mexico have a small source registration permit option (North Carolina has the regulatory authority for source registration, but is not currently using this option). Many of these small sources would typically be exempt from permitting in many states under the de minimis permitting thresholds. So why do these

two states have a small source registration program? According to Colorado permitting staff, the main objective is to collect information on the number and size of small sources to help the agency with NAAQS maintenance and attainment planning. While the individual air quality impact from these small sources may not be of concern, the cumulative air quality effects of many small sources can be important in urban areas or other locations with high minor source density.

Colorado requires sources to submit Air Pollution Emission Notices (APEN) if an *emission point* has uncontrolled actual emissions greater than or equal to 2 tpy (in attainment areas) and is not otherwise exempted. The APENs requirement is in addition to any required construction permit for the source as a whole (if source-wide uncontrolled actual emissions are greater than 5 tpy VOC and PM_{10} or 10 tpy TSP, CO, SO_2, and NO_x, a construction permit is required). APENs are valid for five years and must be renewed.

In New Mexico, facilities with potential emissions greater than 10 tpy, but less than 25 tpy and 10 lb/hr, qualify for a Notice of Intent (NOI) and construction permits are not required. An NOI is basically a registration system, and it must be filed before construction can begin (a written determination from the Agency that the source is eligible for the NOI is also required before construction). The Agency has 30 days to make this determination after receipt of the NOI.

5.1.3 Exemptions (and Inclusions)

All of the States in the survey include some type of permitting exemptions. Most commonly, this is in the form of a list of sources, activities, and/or emission units that are exempt. For example, Colorado has two quite extensive and detailed lists of sources exempt from APENs and construction permits. Conversely, Minnesota's exemption list is shorter because the requirement for permitting it is based primarily on emission thresholds rather than specific source lists.

Utah's program includes several exemptions to minor source permitting, including a de minimis emissions threshold, a list of exempt sources, and specific exemptions for the following types of projects: replacement of in-kind equipment, pollution prevention projects, burning used oil for energy recovery, and soil remediation projects with actual emissions below 5 tpy. The requirements to submit information and/or receive approval vary for these exemptions. For example, prior agency approval is required to exempt the replacement of in-kind equipment, record keeping is all that is required for qualifying for used oil burning, and written documentation is required prior to conducting soil remediation projects and within 60 days of completing pollution prevention projects. No public comment period is required for any of the changes allowed under these minor source permitting exemptions.

In addition to using specific source exemptions, some states also use a list of specific sources that must be permitted even if emissions are less than the de minimis emission thresholds. For example, Oregon's has a list of sources and throughput thresholds that require a Basic Permit (OAR 340-216-0020); for example, rock, concrete, or asphalt crushing (both portable and stationary) more than 5,000 tons/yr crushed throughput but less than 25,000 tons/yr.

5.1.4 Summary

It is common for States to use de minimis emission thresholds, lists of exempt sources, and lists of specific sources, to determine which sources require permitting. There is considerable variability in the extent of source category exemption lists, and how de minimis emission thresholds are based (i.e., PTE vs. actual emissions). One benefit of de minimis emission thresholds is that a comprehensive list of sources does not need to be created. The emission threshold levels can be based on a general "common sense" definitions of "smaller sources" (i.e., less than 5 tpy PTE), or they can be based on dispersion modeling analysis that help define what emission levels can have significant impacts on air quality (i.e., the PSD Significant Emission Rates).

5.2 Streamlining Options

5.2.1 General Permits

General permits ("GPs") are very common, and, among the states selected for review, only Colorado and Utah do not use this streamlining mechanism (although Colorado has an asphalt industry work group developing a draft GP). As indicated in Table 3, seven of the ten States with GPs require them to be renewed, and only Minnesota, New Mexico, and Oklahoma developed GPs that do not expire. Also, GPs in the surveyed states are available only to facilities that are minor Title V sources (i.e., Type I sources), with the exception of Minnesota. The Minnesota Pollution Control Agency (MPCA) developed a General Manufacturing GP that can be used for both minor sources and Title V major sources. The Texas rule for GPs state that a source must certify the maximum allowable source emissions that avoid Title V applicability, although its PBRs can be used by Title V major sources. The most common source categories of concern to ADEC with GPs are asphalt plants, rock crushing, and various types of combustion equipment, and these are discussed further below.

New Mexico and Texas have specifically designated "oil and gas" permits, however they typically address well field production activities rather than exploration and drilling operations. Many States have GPs for common sources at oil and gas facilities, such as engines, but applicability is limited to stationary IC engines, not the "non-road" engines that are common on portable drill rigs. Colorado generally exempts drilling rigs from permitting requirements, but does require oil and gas exploration and production operations (well site and associated equipment) to provide written notice of proposed locations before drilling (see Regulation 3, Part A, II.D.1.III). An APEN is required after exploration if production will result in emissions above reportable thresholds.

Of the ten States with GPs, eight have an asphalt plant GP, seven have a rock crushing GP, and six have GPs for both categories. Several of the asphalt GPs also address co-located crushing operations (only Arizona uses a production limitation for crushing when co-located with a hot-mix asphalt plant). The asphalt and crushing GPs commonly include maximum production rate and/or hours of operation restrictions, and these limits vary widely. Limits on crushing production rates vary from 200 tons per hour (Mississippi and Texas) up to 2,500 tons per hour in Minnesota (which has a matrix for

applicability based on the number of crushers/screens or their capacity and plant annual production). Oklahoma and Oregon are the only States without operational restrictions in their GPs for crushing, although these GPs include annual emissions limits. For asphalt plants, five of the eight GPs include specific production restrictions, while the other three use limits on annual emissions. Asphalt plant restrictions for GP applicability vary from 200 to 1,000 tons per hour, with Mississippi and South Carolina also limiting annual production rates. NSPS requirements for asphalt plants and rock crushers (Subparts I and OOO) are typically either incorporated in the GPs or referenced, and Arizona and Oregon have also specified emission limits for non-NSPS units.

Three of the ten States have GPs for soil remediation, although the activities covered under the GPs are rather restricted. For example, Arizona and New Jersey limit applicability to gasoline contaminated sites. Arizona allows stationary or portable soil vapor extraction units (SVEUs) to be covered under its GP and includes a process weight-based PM emission limit. New Jersey's GP includes a generic opacity requirement, while Texas requires no visible emissions from the handling and processing (crushing, screening) of contaminated soils.

5.2.2 Permits by Rule

The State survey found that Permits by Rule ("PBR") are less commonly used as a streamlining mechanism, and only Oklahoma and Texas use this approach. Source categories of interest for which Oklahoma has PBRs include general PM emission sources and VOC storage and loading facilities. In Oklahoma, PBRs are designed for facilities with actual emissions of less than 40 tpy, and GPs can be used for facilities with emissions above that level but below major Title V thresholds. The Oklahoma Department of Environmental Quality requires that the source operator submit a letter requesting registration under the PBR, and the regulations state that compliance inspections will be conducted in response to complaints and on a random basis.

Texas has an extensive list of PBRs, including equipment/facilities under source groupings like aggregate and pavement, combustion, oil and gas, as well as turbines and engines. Due to the numerous sources covered under PBRs, the Texas Commission on Environmental Quality (TCEQ) established general requirements applicable to all PBRs such as applicability, registration, and record keeping requirements. To quality under a PBR, actual emissions must be below 250 tpy NO_x or CO and 25 tpy VOC, SO_2, or PM_{10}, and the source cannot be a new major source or major modification under NSR. TCEQ developed an application form specifically for PBRs and most categories have flowcharts to facilitate applicability determinations and equipment specific tables to include as part of the application. Representations made in the certified application become conditions for construction and operation, including the establishment of enforceable emission limits. Some of the PBR only require a notification from the source, while others require a more detailed registration with agency approval required before construction can begin.

5.2.3 Minnesota Registration Permits

Minnesota uses a "unitary" permit approach for both major and minor sources. The requirement to obtain a "State" minor source permit in Minnesota is based on whether the source's uncontrolled potential emissions are greater than the State de minimis

thresholds. These "de minimis" thresholds (100 tpy for NO_x, CO, VOC, and PM; 50 tpy SO_2; and 25 tpy PM_{10}) are quite high when compared to other states de minimis thresholds. If the source is required to obtain a State minor source permit, there are three options: a source -specific permit, a General Permit, or a registration permit. The source specific and GP type permits are similar to those discussed previously, but there are some unique aspects to Minnesota's registration minor source permit.

The registration permit is designed for sources with potential emissions above the state or Title V permitting thresholds, but with "low" actual emissions (defined as 50% of the Title V permit thresholds tpy). This type of permit basically implements, as a streamlined "synthetic minor" permitting option, the interim federal guidance that sources with actual emissions of less than 50% of the Title V permit thresholds do not require a Title V permit[2]. Sources demonstrate that actual emissions are below the thresholds using equipment-specific performance test emission factors, control efficiencies for common "listed" types of pollution control equipment, and by limiting the amount of fuel burned, production levels, or the number of hours equipment is operated. If the source uses performance test factors and control device efficiencies, they must meet general state rule requirements for testing, and for the operation and MRR for control equipment. Any limits on hours of operation do not become a registration permit condition, but instead the source is obligated to submit annual emissions data to demonstrate it remains below the registration permit actual emission thresholds. Sources can make changes under the registration permit as long as they would remain eligible for the permit. Registration permits do not expire and do not require individual public notice.

There are four categories of Registration Permits, referred to as A through D. The requirements and level of detail for compliance generally become more complex as you proceed down the list. Option A is for sources subject only to certain NSPS, specifically Subparts Dc (small boilers), I (hot mix asphalt), the K series (tanks), DD (grain elevators), EE (coating of metal furniture), SS (coating of large appliances), JJJ (petroleum dry cleaners), and TTT (coating of plastic parts for business machines). Option B is applicable to VOC-only sources. Option C is for combustion sources, including boilers and IC engines, and from other source types including VOC-containing material handling operations, insignificant activities, and dust from roads or parking lots. Eligibility for the most complex option, D, is defined as actual emissions under 50% of Major source Title V thresholds. Compliance requirements are generally record keeping (e.g., material or fuel usage on a monthly basis) and for Option D, to calculate actual emissions each month and submit annual emission inventory reports.

There is one inconsistency in the PM10 potential and actual emission thresholds used in the Minnesota Registration Permits. The state permitting threshold for PM10 is 25 tpy PTE, which indicates that the source is large enough to warrant permitting. However, the actual emission limit for Registration Permit eligibility is 50 tpy, indicating that only a registration permit is needed sources with emissions below 50 tpy. The effect of these thresholds is somewhat to cancel each other, with the result being a simple registration permit.

[2] See memorandum dated December 20,1999 titled "Third Extension of January 25,1995 Potential to Emit Transition Policy" from John S. Seitz.

MPCA is considering creating a new registration permit with an actual emission cap of 90 tpy. (This is discussed further in Section 5.3.) According to agency data through June 1999, of the 2,235 permits processed since the registration permit program began, 1,902 were minor registration permits, 210 were minor general permits, and only 123 were source-specific major and minor source permits.

See: http://www.pca.state.mn.us/air/pubs/3-01.pdf for Registration Permits Fact Sheet and
www.pca.state.mn.us/publications/forms/airpermits/air-registrationpermithandbook.pdf for the Registration Permit Handbook

5.2.4 North Carolina Notice of Intent to Construct

The State of North Carolina recently adopted a "Notice of Intent to Construct Prior to Receipt of Air Permit" program. The North Carolina Division of Air Quality (NCDAQ) air permitting program issues a single permit that authorizes both construction and operation. In response to industry concerns about construction delays, the North Carolina General Assembly passed the Notice of Intent to Construct legislation.

In general, the program allows an existing permittee to begin construction on a minor modification to an existing source (e.g., modify an existing emissions unit or construct a new emissions unit that does not trigger major NSR review) prior to receiving a permit. The process is as follows:

1. The applicant is required to publish a public notice in a local newspaper describing the project along with an estimate of emissions and a schedule of construction.
2. Within 15 days of the date of publication, and at least 15 days prior to actual construction, the applicant must submit a Notice of Intent to Construct to the Agency along with a $200.00 processing fee.
3. The Agency shall, within 15 days, make the following findings:
   - Has the applicant been in substantial compliance with all existing permits?
   - Will the proposed modification have a significant impact on air quality?
   - Will the Agency be likely to issue the subsequent operating permit?
4. If the Agency is satisfied that the above conditions are met, then the Agency shall issue an approval to the applicant.
5. Upon receipt of the approval the applicant is authorized to begin construction – but may not operate until a construction/operating permit is issued by the Agency.
6. If the Agency rejects the Notice of Intent to Construct, the applicant has a right of administrative appeal.

See: http://daq.state.nc.us/permits/ConstBill/ for guidance developed by NCDAQ to implement this program.

5.2.5 Oregon Permits for Short Term Activities

The Oregon Department of Environmental Quality (ODEQ) has several types of minor source permits, including one for short term activities. These letter permits are issued for unexpected or emergency activities, operations, or emissions, and may include conditions restricting the method(s) of operation, as well as record keeping and reporting requirements. Sources request Short Term Activity permits by applying in writing including details on the emergency or proposed activity. No public notice is required and the permit is issued in the form of a letter. Permit duration is 60 days from the date of issuance and the permit cannot be renewed.

For further information, see:
http://www.deq.state.or.us/aq/aqpermit/ACDP/Application%20Guidelines.htm

5.2.6 Colorado Self-Certification Options

The Colorado Department of Public Health and Environment (CDPHE) has developed a "self-certification" option to essentially convert a minor source construction permit into a minor source operating permit. This isn't a permit streamlining option per se, but rather an option for converting minor source construction permit approval into a minor source operating permit.

After review of a minor source construction permit application, CDPHE issues an Initial Approval (in effect, the construction permit) which allows the source to construct and start operation. In the past, CDPHE was then responsible for inspecting the sources and issuing a Final Approval (in effect, a minor operating permit) within 180 days after the source began operation. As a result of a law passed by the State Legislature (Colorado House Bill 96-1307), it is now the source's responsibility to demonstrate compliance with all Initial Approval permit terms and conditions within 180 days of starting operation. CDPHE developed the "self-certification" package to facilitate this process.

In order to "finalize" the construction permit (and effectively convert it into a minor source operating permit), compliance with all permit terms must be demonstrated by the source. The self-certification packet includes instructions, guidance, and forms to accomplish this task. For instance, compliance with an opacity limit is assumed for gas-burning and VOC only sources, and a Method 9 test is required for other equipment. Records and calculations used to demonstrate compliance with operational and emission limits are required to be available upon request. Also, assistance from CDPHE is available, which is charged at an hourly rate. The Final Approval permit does not expire.

For more information, see:
http://www.cdphe.state.co.us/ap/downpermitforms/selfcertification.pdf

5.2.7 Summary

All the States in the survey have some type of streamlining mechanism(s). GPs are a more common option than PBRs. This may be due to the ease of developing and making changes to GPs, as compared to PBRs which require a rulemaking change. While one theoretical advantage of a PBR is that only a notification is required, which would result in the ability to begin construction immediately, as compared to a GP where a permit application must be submitted, reviewed, and approved. However, Texas does require registration and approval for some of their PBRs, and it would be possible to develop a "self-executing" GP. Therefore, there are approaches to expedite the approval to construct under both GP and PBR mechanisms.

5.3 Other States Considering Program Changes

During the survey several of the States stated they are considering further changes to their minor source permit rules to streamline permitting. Oklahoma and Minnesota are evaluating increasing the permitting de minimis thresholds, and South Carolina is just beginning to consider program revisions.

A work group has been formed in Oklahoma to advise the Air Quality Division on replacing the existing PBR with "permit exempt" source categories. The revision would exempt facilities from the requirement to obtain a permit if actual emissions are less than 40 tpy and PTE is less than the Title V and PSD thresholds.

Minnesota is considering a rulemaking that would create a new registration permit with an actual emission cap of 90 tpy or less. MPCA sent out a survey in May 2003 to sources that might potentially be eligible for the new permit. Part of the intent of the survey was to determine if larger sources (> 90 tpy actual emissions) would be willing to implement pollution prevention projects to reduce emissions in order to qualify for the new permit. A total of 444 surveys were sent out and in June 35% of the surveys had been received. Sixty percent responded they would reapply for a new registration permit, 21% said no, and 19% were uncertain.

5.4 Portable Source Permit Options

The typical state requirement for relocation of a portable minor source is to notify the Agency in advance. Advance notice requirements for asphalt plants and rock crushers vary from as short as 48 hours in Minnesota to 15 days in New Mexico. New Mexico also requires that operation cannot start at the new location unless written approval is received from the Department. In an effort to streamline relocation noticing, Colorado allows the reporting of multiple relocations. Texas issues "portable permits" that include relocation conditions which contain control requirements and distance to ambient air boundary limitations; if these requirements cannot be met for a particular site, the source is then submit to a "change of location" application for review of BACT and site-specific ambient air impacts.

5.5 Type II Permit Modification Issues

When "minor modifications" (i.e., not major NSR modifications) are made at existing Title V major sources, the minor source program basically functions as a construction permit program. The minor source permit approves the construction of the minor modification, and then the application for a modification to the Title V operating permit must be submitted[3]. Therefore, for these types of sources the minor source permit does not need to include detailed regulatory emission limits (such as SIP and NSPS limits) and associated MRR provisions, as these terms and conditions will be contained in the revised Title V permit. The minor source permit simply functions as a construction permit, and therefore should only contains those testing and compliance conditions that are required to ensure the source meets specific terms and limits that formed the basis of the construction permit.

As described in Section 5.2.1, some of the streamlined permitting options available in other states, such as GPs, are only available to facilities that are minor Title V sources. However, GPs can be developed that would allow for construction approval for minor modifications at Title V major facilities, with the follow-up Title V permit modification requirements taking place outside of the GP permitting process. Therefore, the use of GP permits for Type II minor sources is a feasible permitting option (although evaluating the generic air quality impacts during the GP development would be difficult for this type of source).

5.6 Ambient Modeling Requirements

The survey results for 12 states (not including Alaska) regarding ambient air analysis requirements for minor sources are presented in Table 4. Some of the conclusions that can be made from reviewing this data are:

1. Eight out of the 12 states require air modeling for minor source permits; the requirements are explicitly contained in the state rules for six states, and in two state

[3] The timing requirements for submittal of the Title V modification application at an already permitted Title V facility are somewhat ambiguous. On one hand, if the Title V permit is viewed as a document that prohibits operation of any source in a manner not prescribed in the permit, then any changes at that facility must be accounted for in a Title V modification application before the revised source can begin operation. However, many States view the Title V permit as a document that defines the obligations of each source listed in the permit, but does not address the obligations of any new or modified emission sources until that source is added to the permit proper. This latter approach is often called the "equity approach", in that the Title V regulations clearly allow a greenfield source to operate for up to 12 months before it is required to submit a Title V application. A similar existing facility should be afforded the same benefit of first obtaining a construction permit and then, within 12 months of operation, submit an application to amend the Title V permit. This aspect of the federal Title V rule requires familiarity with the concept of "off-permit" changes (see 40 CFR 70.5(a)(1)(ii)). In essence, a permit allows any activity that it does not actually address or prohibit. Certain changes, such as the installation of a new emissions unit, can occur "off-permit," meaning that for all practical purposes they can be treated as if they were a new facility applying for an operating permit for the first time. Nonetheless, if an existing part 70 permit condition would prohibit such construction or change in operation, the source must obtain a permit revision before commencing operation. It should be noted that EPA's policy in Indian Country, where EPA implements the Title V program, is that an application for a Title V modification must be submitted within 12 months of the beginning of operation, not before operation begins.

the modeling requirement is a "policy" based on generic rule language regarding protection of public health.

2. Two of these eight states only require NAAQS modeling for minor sources, while the other six require both NAAQS and, when minor source baseline dates have been triggered, PSD increment modeling.
3. Out of the eight states that require modeling, four use the PSD Significant Emission Rates (SERs) as thresholds to require modeling.
4. One of these four states that use the SERs as modeling thresholds express them as both annual tpy and short-term lb/hr and lb/day rates; this is an effort to include sources that have high enough short-term emissions to potentially impact the NAAQS, even though the annual emissions may be limited to levels below the SERs.
5. Of the eight states that require modeling for minor sources, two states have no modeling emission thresholds (all minor sources must model, although simple screening modeling will usually be sufficient), and one other state has modeling thresholds of 25 tpy and 10 lb/hr, below the PSD SERs.
6. Two states require minor source air modeling analyses on a case by case basis, depending upon the nature and size of the source, and the presence of other nearby sources. Given the case by case review, there are no generic emission thresholds to trigger the modeling requirement.
7. Two states do not require modeling for minor sources, and one state very infrequently requires modeling for minor sources.
8. For the 11 states that have streamlined permit options including PBR or GPs (including Colorado which has only a proposed GP for asphalt plants), six states included modeling analyses as part of the development of the PBR/GP.

These results suggest that many states are using air modeling requirements in their minor source permitting program to help meet the EPA SIP requirement of maintaining the NAAQS (refer to Clean Air Act at Section 110(a)(2)(C)). Generic modeling emission thresholds can be used to determine when modeling is appropriate, while minimizing the burden on applicants and the agency. However, there will always be situations where a source has poor dispersion characteristics (low stack heights, downwash, short distance to ambient air boundaries) or is located in areas with poor existing air quality (high density of emission sources or a few large sources), and in these cases generic modeling thresholds may not be appropriate. Also, because the highest ambient impacts of PM10 and SO2 relative to the NAAQS typically occur for 3-hour and 24-hour periods, it is logical to use short-term modeling thresholds for these pollutants, not just annual thresholds. Given the difficulty in developing generic thresholds, some states simply determine if modeling is required an a case-by-case basis.

For those states that do not require minor source air modeling, or do not conduct modeling as part of PBR/GP development, what other mechanisms help ensure achievement of the NAAQS? First, the general state emission standards or "SIP emissions limits" were originally developed expressly for this purpose. However, many of those emission standards were developed decades ago, when advanced air quality models that simulate downwash were not available; therefore, the SIP limits may not always protect the NAAQS. Second, it can be argued that the PSD program itself helps achieve and maintain the NAAQS through the PSD cumulative modeling requirements (which must consider the emissions from nearby minor sources). While PSD required modeling evaluates the impacts of minor sources on the NAAQS, this usually occurs

"after-the-fact" during permitting of a major source and does not track the status of the NAAQS as the minor sources are constructed and operated. While these two mechanisms can arguably help achieve and maintain the NAAQS, they will "miss" some minor sources that can have serious air quality impacts and therefore aren't as effective as including some type of modeling requirement in the minor source program (or in the development of streamlining options such as GPs).

5.7 State BACT Requirements

One of the minor source program elements identified through the survey are minor source "state-BACT" requirements (not the same as state general SIP emission limits). The general intent of BACT requirements is best described in the US Senate Report on the BACT provisions in the 1977 CAA Amendments, which states that BACT "allows the adoption of improvements in (control) technology to become widespread far more rapidly than would occur with a uniform Federal standard". BACT requirements basically force control technology improvements, and are not part of the SIP requirement to protect and maintain the NAAQS. Therefore, they are an additional (and more stringent) program element than would normally be required in a state minor source program.

Three of the States surveyed have a "State BACT" requirement for minor sources. New Jersey requires sources to document "state-of-the-art" for construction or modification if the PTE of a criteria pollutant (calculated separately for each piece of equipment) is 5 tpy or more. In Texas, any new source or modification that will emit pollutants must design the facility "to include methods of reducing or eliminating the emissions, so long as those methods are technically practical and economically feasible." The TCEQ has drafted extensive source-specific state-BACT procedures and guidance, including a "tiered review" and presumptive state-BACT determinations. In the permitting guide for Utah, it states that "Every facility, operation, or process that proposes any activity that would emit an air contaminant into the air, must by law consider the best control of all the emissions."

5.8 Minor Source Permit Content and MRR Requirements

The content and level of detail of minor source permits MRR conditions vary widely for the surveyed states. On one hand, the Minnesota registration permit is typically a one page permit, and for Option D only requires the calculation and recordkeeping of actual emissions each month, with an annual emission inventory filing along with the annual emission fee payment. On the other extreme, Arizona's minor source permits are very similar to major Title V/PSD permits, with extensive and detailed MRR requirements for both source-specific limits as well as SIP, NSPS, etc., limits and requirements. New Mexico's GP for asphalt plants contains MRR requirements including such items as monthly opacity tests (using Method 22), differential pressure monitoring for baghouses, and data on hours of operation, production rates, and haul truck activity levels. Oregon's asphalt plant GP MMR requirements include initial performance tests, recordkeeping (production rates, upset conditions, and complaints received at the facility), and annual reporting of the data (ODEQ performs site inspections on a routine basis, and more

frequently if complaints are received). Clearly, even the streamlined minor source permits such as GPs typically include detailed MRR conditions.

6.0 Conclusions

The objective of this task was to survey and summarize the various approaches states use to regulate and permit minor sources, and identify options for ADEC's consideration. This section has been organized into a series of answers to several questions on minor source permit programs.

The approaches used by the surveyed states vary widely, and include the extremes of the spectrum in almost every area (for example, no modeling requirements for minor sources ranging to modeling required for all minor sources). Therefore, support can be found in the survey results for any of the permitting options, and it will be necessary for ADEC to clearly state the objectives and priorities for the Alaska minor source program in order to determine which permitting options best meet the program objectives.

6.1 Who Needs a Minor Source Permit?

From the state agency perspective, non-major sources that can affect the attainment and maintenance of the NAAQS warrant regulation through a minor source program. From the regulated community perspective, sources with potential emissions above, but actual emissions below, the major source thresholds want the ability to limit their emissions via a streamlined minor source program to avoid the burden of complying with complex major source requirements.

To address the first perspective, most states used a combination of criteria to define those sources require permitting, including de minimis emission thresholds, lists of exempt sources, and lists of specific sources that require permits. There is considerable variability in the extent and detail of source category lists, as they can be customized to address the types of sources important to air quality in a particular state. De minimis emission thresholds can be stated in terms of potential or actual emissions. The threshold levels can be based on a general "common sense" definition of small sources (i.e., less than 5 tpy PTE), or they can be based on dispersion modeling analyses that help define what emission levels can have substantial impacts on air quality. One option would be to use the PSD Significant Emission Rates (SERs) as the de minimis minor source permitting thresholds, since they arguably define what emissions cause important air quality impacts. North Carolina's list of exempt activities is based primarily on the PSD SERs, and similarly Oregon uses the SERs for some of there multi-tiered minor source permitting thresholds ("general" and "simple" minor source permit categories). Also, given that maximum air quality impacts for SO2 and PM10 are better reflected by maximum hourly emission rates rather than annual tpy rates, another option would be to state the de minimis emission rates using lb/hr thresholds rather than tpy thresholds; out of the states surveyed, only New Mexico has implemented such an approach.

From the regulated source perspective, the simplest structure that defines which sources require permits would be preferred. This would suggest that specific source exemption and inclusion lists (possibly with throughputs and/or material feed rate thresholds) would be preferred, to simplify the determination of permitting applicability. If only de minimis emission thresholds are used (e.g. 5 tpy), it requires sources to estimate emissions, which can be a challenge for smaller sources. When a source has potential emissions over the major source thresholds and is looking to avoid requirements by taking an enforceable emission limit, the simplest and most streamlined options would be preferred over source-specific avoidance permits. The next section summarizes streamlining options.

6.2 Are there Streamlined Minor Source Permit Options?

When a source needs a minor source permit, what types of permitting options are available that are more streamlined than source-specific permitting? This survey has determined that the most common streamlined permitting option is the use of General Permits for common source categories. The development of the GP can take into account the size ranges of sources in the category for the state, and can also consider air quality modeling analyses to help develop GP emission thresholds or limits. In fact, most states with GPs perform modeling as part of the GP development, even though the modeling can become the most difficult aspect of the GP development process. For example, Colorado's asphalt plant GP is still under development, in part because of difficulties in establishing general criteria (emission rates, stack heights, distance to ambient air boundaries) that can modeled to demonstrated compliance with the NAAQS. Other advantages of GPs include permit forms targeted for the source category, no public notice requirements (except for the initial GP), and ease in revising the GP (as contrasted with PRB, which require rule changes for any revisions).

Minnesota has implemented "registration" permits as a streamlined avoidance alternative. Minnesota's registration permit is designed for sources with potential emissions above the state or Title V permitting thresholds, but low actual emissions (defined as 50% of the Title V permit thresholds tpy). This permit basically implements, as a streamlined "synthetic minor" permitting option, the interim federal guidance that sources with actual emissions of less than 50% of the Title V permit thresholds do not require a Title V permit. Sources demonstrate that actual emissions are below the thresholds through annual emissions inventory data. Sources can make changes under the Minnesota registration permit as long as they would remain eligible for the permit, and the registration permits do not expire and do not require individual public notice. Even though some of the features of this synthetic minor approach are desirable, the air quality impacts from these "registered synthetic minor sources" was not evaluated in great detail during the development of the program nor during the permitting process, and therefore the extent to which this option protects the NAAQS is uncertain.

One unique streamlined permitting option that addresses the need for expedited construction approval is North Carolina's Notice of Intent to Construct program. This approach allows an existing permittee to begin construction on a minor modification to an existing source (e.g., modify an existing emissions unit or construct a new emissions unit that does not trigger major NSR review) prior to receiving a permit, so long as the

agencies determines that the proposed modification will not have a significant impact on air quality and that the Agency will likely be able to issue the permit.

6.3 When is Air Modeling Warranted?

Since the main purpose of a minor source permitting program is to ensure protection of the NAAQS, air modeling should be a component of the program. However, air modeling is one of the most burdensome aspects of source-specific permitting and any streamlining options for modeling would be highly desirable.

At one extreme, some states require air modeling for all minor source permitting, while at the other extreme some states do not require any modeling for minor sources (and presumably rely upon generic SIP emission limits to protect the NAAQS). Middle-of-the-road options include:

- the use of thresholds to trigger modeling requirements in source-specific permits,
- generic modeling "look-up" tables (such as used in EPA's RMP program[4]) that use emissions and distances to ambient air boundaries to quickly determine if ambient impacts would be acceptable, and
- the consideration of reasonably conservative generic modeling analyses in the development of streamlined permits such as GPs (refer to New Mexico's GP for asphalt plants as an example of a GP with emissions and distance to ambient air criteria that are based on generic modeling analyses).

Most states use the PSD Significant Emission Rates (SERs) to trigger modeling requirements. To help address concerns that the SERs may not catch potential NAAQS violations for synthetic minor sources[5], another option is to trigger modeling requirements using lb/hr thresholds rather than tpy thresholds. One state uses a 25 tpy and/or 10 lb/hr threshold for all pollutants to trigger modeling. Finally, given the difficulty in developing generic thresholds, one final option is simply to determine if modeling is required on a case-by-case basis.

6.4 What about Permit Content and Duration?

As discussed in Section 1, there are two groups of sources that can be regulated under a minor source permit program; new or modified sources that are not subject to Title V (Type I minors), and minor PSD/NSR modifications at sources that are Title V major (Type II minors). The permit content and level of detail vary for these two types of minor permits. For Type II minors, the minor source program basically functions as a minor construction permit program. Therefore, these permits do not need to include detailed regulatory limits (such as SIP and NSPS limits) and associated MRR provisions,

[4] See EPA's Risk Management Program Guidance For Offsite Consequence Analysis at http://www.epa.gov/ceppo/pubs/oca/oca-all.pdf

[5] The highest impacts of PM10 and SO2 relative to the NAAQS typically occur for short term 24-hour periods. Synthetic minor sources could have hourly rates that exceed the equivalent SER hourly rates even though the annual PTE is limited below the SERs.

and instead the testing and MRR requirements should simply be based on any specific terms and limits that formed the basis of the permit application. For Type I minor sources that do not have a Title V permit, the minor source permit functions as both a construction and operating permit. Therefore, it should contain not only testing and MRR conditions for permit-specific limits and conditions, but optionally it could also contain other applicable regulatory limits, requirements, and associated MRR provisions (such as SIP and NSPS limits and notification requirements), so that the source operator is aware of their obligations and compliance methods.

Some of the minor source streamlined permits issued by the surveyed states do not expire, while most use a system similar to Title V that includes a 5 year renewal requirement. The fact that a permit does not expire doesn't imply that it cannot be reopened as necessary, or that new applicable regulations are not in effect. Instead, non-expiring permits are an attempt to minimize administrative burdens for agencies and the regulated community. The compelling reasons for renewable permits are to allow the agency (and the source) to periodically evaluate if:

- all applicable requirements, including any new requirements, are identified,
- prohibited changes have occurred, and
- to improve the permit terms and conditions based on the agency and source's experience operating under the permit.

It should also be noted that minor source permit renewal procedures can be streamlined and do not necessarily require the submittal of a full permit application (as is the case for Title V permit renewals).